CASE REPORTS

Phytophotodermatitis mimicking child abuse

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Phytophotodermatitis (solar keratosis from plants) can be caused by many plants and usually results in an erythematous reaction only. We report a severe case resembling a partial thickness burn in a child after exposure to the herb garden rue and bright sunlight.

CASE HISTORY

A 3-year-old girl presented with what appeared to be a superficial dermal burn to her buttocks involving 1.5% body surface area. The mechanism of injury was uncertain. Two days previously she had been playing in a paddling pool. It had been a bright summer's day and she was unclothed. A sun barrier cream had not been applied. That evening her buttocks and thighs had become painful and the affected areas turned red. By the following morning the reddening had worsened and there was blistering of the skin overlying her buttocks. She was taken to the local hospital, by which time the blisters had begun to coalesce. She was febrile (38.5°C) and the area of blistering over her buttocks resembled a thermal burn. Since there was no obvious explanation, non-accidental injury was suspected and she was admitted for observation. The blisters were aspirated and the fluid was sent for Gram staining and culture. She was started on intravenous flucloxacillin but this was stopped when the Gram stain proved negative. Culture after 48 hours revealed no growth. The blisters continued to coalesce and she was referred to East Grinstead.

On admission she was diagnosed as having superficial dermal burns of the buttocks and anterior aspects of the thighs (Figure 1). The affected areas were dressed with tulle-gras and an absorbent dressing. Simple analgesics were prescribed and the patient was treated daily as an outpatient. The burns healed after nine days. It was still not clear what had caused the burn until the child's mother produced a specimen of the herb rue (*Ruta graveolens*), which was growing by the paddling pool, together with a magazine article that she had found highlighting the poisonous nature of certain plants. Phytophotodermatitis due to *R. graveolens* was then diagnosed. The child made an uneventful recovery.

Figure 1 **Lesion resembling superficial dermal burn of the buttocks 48 hours after injury**

COMMENT

The term phytophotodermatitis was used by Klaber in 1942 to describe a cutaneous reaction caused by sun exposure after contact with plants, resulting in erythema, blistering and hyperpigmentation of the skin[1]. The photosensitizing moiety is the furocoumarin (psoralen) molecule which has been isolated from species of Umbelliferae (angelica, cow parsley, celery, giant Russian hogweed), Rutaceae (rue, bergamot, citrus fruits), Moraceae (figs) and Leguminosae (scurf pea)[2]. Figure 2 shows a specimen of garden rue. Although symptoms are usually mild there have been previous reports of severe phototoxic reactions mimicking partial thickness burns[3].

For symptoms to develop, contact between the plant and moist skin is required; moistness facilitates the transfer of photosensitizer into the skin. The major pathway for photosensitization is the ultraviolet-A-induced covalent binding of the psoralen molecule into DNA. This can produce crosslinking of DNA, mainly in the epidermis, which results in severe skin damage and the formation of bullae[4]. The clinical picture is characterized by erythema in the first 24 hours followed by development of vesicles which coalesce into bullae over subsequent days. The healed lesion characteristically has a hypopigmented centre with an area of surrounding hyperpigmentation that may persist for months. The late culmination of the reaction after 48 hours is typical of the psoralen photoreaction—whereas the erythema produced by ultraviolet B is of shorter onset and duration.

Phytophotodermatitis is especially common in children playing out of doors in the summer holidays when psoralens

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Figure 2 ***R. graveolens***
The nurseryman's label warns that 'certain parts of it may cause irritation to sensitive skin'.

are most abundant in wild and garden plants. Gardeners and agricultural workers may expose themselves to potentially sensitizing plants including celery, parsnip, and parsley[3] and when clearing weeds with a string trimmer[5]. Affected children may present with lesions mimicking burns in bizarre circumstances and the injury is often unjustly labelled non-accidental before the true diagnosis is realized[6].

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Blood gas deterioration after cholecystokinin administration in an infant

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We report a case in which cholecystokinin (CCK) administration to an infant with cholestasis seemed to have adverse effects on blood gases.

CASE HISTORY

A 31-weeks-gestation infant required Dacron patch repair for a left-sided diaphragmatic hernia on day 3 of life after a period of stabilization. Surfactant was not administered. The lung was severely hypoplastic. The patient was stable on postoperative continuous endotracheal positive airway pressure (CPAP) and blood gases showed a chronic compensatory metabolic alkalosis, suggesting a degree of pulmonary insufficiency. Intravenous nutrition was started shortly after the hernia repair and was continued since enteral feeds were not tolerated. The patient developed conjugated and unconjugated hyperbilirubinaemia and clinical jaundice. Liver ultrasound scan revealed debris in the gallbladder and bile duct dilatation. The following investigations were negative: TORCH screen (toxoplasma, rubella, cytomegalovirus, herpes virus); α_1 antitrypsin; Cu^{++}, Fe^{+++} concentrations; auto-immune serology; infection screen (upper airway swabs, endotracheal secretions, blood culture, urine culture). The timing of the deterioration and results of serological/ultrasonographic investigations suggested the presence of mixed intrahepatic and extrahepatic cholestasis. However, this was not confirmed by isotope scintigraphy or liver biopsy. In an attempt to treat presumed biliary obstruction, two daily boluses of CCK were administered (1 international unit/kg/2 h lyophilized porcine CCK, Ferring Pharmaceuticals, Malmö, Sweden) on days 46 and 47. The agent was obtained on a 'named patient' basis, and was administered with the parents' agreement. No other physical or

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